The Basics of VCR Specs

Video

Video Valhalla
Hi-Tech Hideaway

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OCTOBER 1985

The #1 Magazine of Home Video

TV Radiation Time Bomb

Ticking Away in your Living Room?

Connoisseur Recorders

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BERGER-BRAITHWAITE VIDEOTESTS
Sony SuperBeta Hi-Fi VCR
Sylvania VHS Hi-Fi VCR
Proton Video Tuner
AudioSource A/V Selector/Processor

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October 1985

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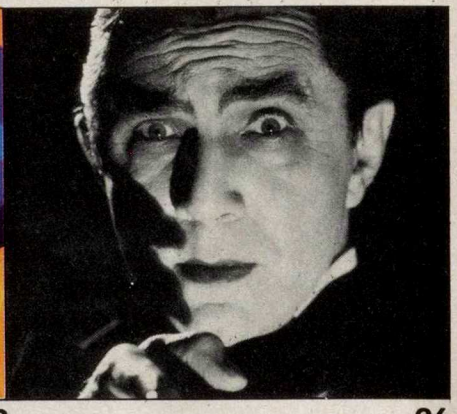

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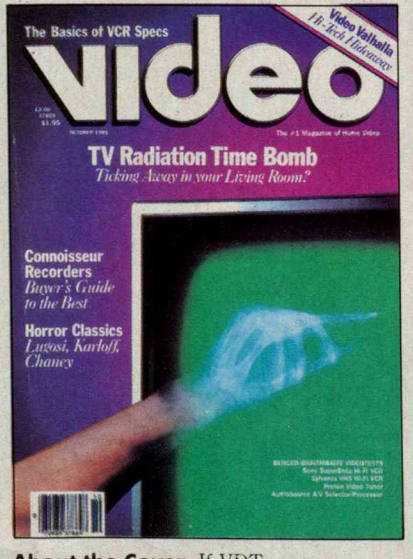


About the Cover. If VDTs are a radiation hazard, what about TVs? Do we know all we should? Cover photo by Roberto Brosan.

Columns

Random Access

Personal Computers, News, and Games

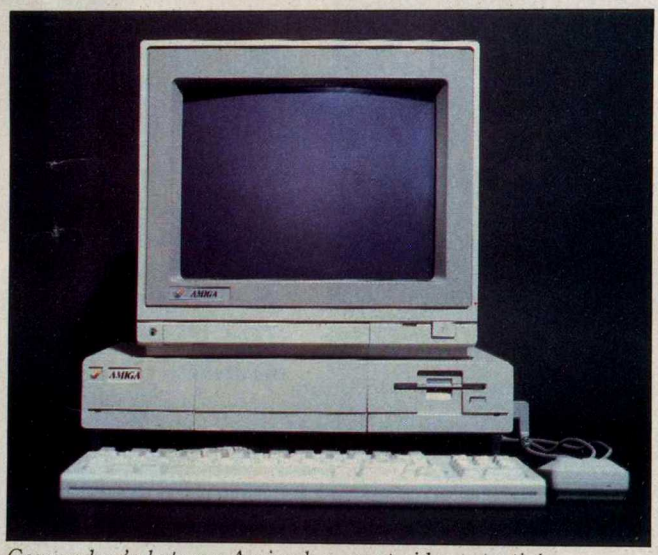
Hardware Review: A Video Computer

The world of video is going digital, from consumer TVs to plans for new high-definition VCRs. And if it weren't for computers, what we see on television would be terribly dreary. Computers generate text and graphics for the news, weather maps, and stunning new effects for commercials.

Still, in our homes, our video machines and computers each lead a happy but separate coexistence. It's not that these remarkable examples of advanced technology don't get along. They just have never had any reason to get together. All that may soon change with Commodore's new Amiga personal computer.

The Amiga is designed as a do-everything system—long on creative possibilities yet powerful enough for personal productivity and business applications. It is a potent supermicro-class machine with very high-resolution graphics, digital sound, and the ability to mix the pictures and text it produces with video from any outside source—videocassette recorders, disc players, or cameras. Like Apple's Macintosh and the Atari ST series of "Jackintosh" machines, the Amiga is built around a fast, fast Motorola 68000 microprocessor.

But the Macintosh is very much a paper-oriented machine; it does a splendid job of producing graphics and text-oriented documents. From the beginning, however, the Amiga was conceived as a *video* machine. Its speed and power come from three custom coprocessor chips, two of which are specifically devoted to processing and generating video.



Commodore's hot new Amiga has great video potential.

Although the Amiga's external appearance is ordinary, its special video capabilities are evident on the business end. In addition to a standard set of serial and parallel communication ports, as well as stereo audio outputs, there are no fewer than four separate video outputs. Two of these are for RGB (Red-Green-Blue) analog and digital video monitors. The other two provide full professional-standard RS-170 NTSC video signals, one for composite monitors, the other modulated for reception on a standard TV. As one example of its quality, the Amiga can display up to 80 columns of readable text on an ordinary TV.

Video Graphica

The most obvious difference between the Amiga and other personal computers lies in its graphics ability. Its low-resolution mode is what most computers call hi-res: 320 by 200 pixels (for picture elements, dots that make up the video image) in 32 colors selected from a palette of 4096. Its high-resolution mode is four times greater: 640 by 400 pixels in 16 colors taken from the same palette. Using software tricks, all 4096 colors can actually appear on screen at once. Although this feature will be used by more advanced software packages, it is too difficult for most home users to program themselves.

Besides generating video "sprites"—movable screen objects made popular by the Commodore 64 and Texas Instruments home computers—the Amiga can perform a graphic operation known as "bit blit." The term is shorthand for "bit block transfer." Simply put, it is the ability to cut out part of the video screen (as if you were using a cookie cutter) and paste it over another section. This allows smooth animation and the familiar "windowing" effects popularized by the Macintosh.

This, of course, immediately makes the Amiga a candidate for the best video-game computer to date. But it offers more. Since its video can be recorded on VCRs and meets professional video standards, artists will finally have an affordable tool for creating computer graphics and animation. Advertising agencies can storyboard a television spot on the Amiga before committing to production. In fact, video production companies and even small television stations can (and probably will) use Amiga graphics for news, weather, and sports illustrations. With the proper software Amiga can even act as a good-quality character generator, rivaling those costing thousands more.

Software for creating video graphics and animation is already being developed. In addition to Commodore's own *Graphicraft* painting program (kind of a color *MacPaint*), Electronic Arts Software is planning to release its *Video Construction Set*, which will enable users to create their own "videogram"—digital cartoons and messages. Another programming group, Macromind, is at work combining the best features of its music-composition and video animation programs (*MusicWorks* and *VideoWorks*) for the Macintosh into one enhanced Amiga version.

The Incredible Synching Amiga

Much of the computer's real power, however, is contained in an accessory which Commodore is scheduled to introduce this fall. Called a "gen-lock" adapter, it can combine the text, graphics, and animation generated by the computer with any other video signal. The term gen-lock is familiar to engineers; it simply means linking the sync signals of two different video sources for special effects or for switching.

The gen-lock adapter was originally designed as an interface between the Amiga and a laser videodisc player. It is an innovation in personal computers, but hardly

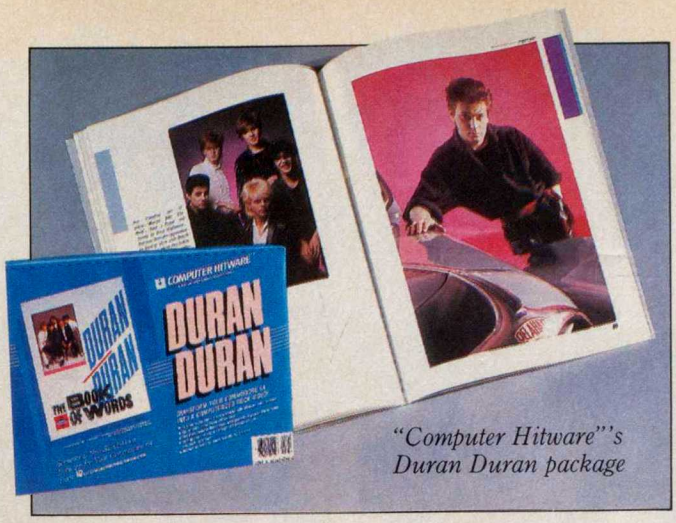
unique. In Japan the Pioneer PX-7 and JVC home computers, as well as special video monitors from Sharp and other manufacturers, perform similar if not identical tasks. Nonetheless, the gen-lock device could be the link that spawns a whole new generation of video and computer applications.

For example, videodisc games like those in arcades are finally a practical reality for the home. And the same techniques can be applied to computer-aided instruction programs based on digital logic and databases, as well as full video from the disc.

Gen-lock isn't just for videodiscs, however. It can be used for titling, illustrating, and superimposing subtitles on videotape. To do so, you'd simply dub the video from one recorder, through the gen-lock adapter and the Amiga, to another.

Why stop there? What about a full-blown video production system with fancy digital wipes and frame effects? Or how about a computer-controlled editing system using two home VCRs? Take the video you shoot with a portable deck, make your editing decisions, preview cuts, then walk away and let the Amiga control the recorders, producing a perfectly edited copy. While these systems aren't yet available, the Amiga's special capabilities make them probable, not just possible.

Other kinds of special effects are offered by yet another Commodore accessory, a full-color video frame grabber. This special circuit will take any video signal and digitize it into a form the Amiga can work with. It can freeze a frame so that graphics programs, like painting software, can manipulate the image or recolor it. This will mean that much Amiga software will incorporate real-world pictures. A game set against the New York skyline, for instance, could have a photorealistic background. Already popular on systems like the Macintosh (where they work only in black & white), the video frame grabber is almost certain to become an integral part of any Amiga system used for creative purposes.



"Computer Hitware"'s Duran Duran package

The Price of Pioneering

Advanced features like these don't come cheap. While this kind of video computing power costs tens of thousands of dollars in other systems, the Amiga is a bargain, all things being relative.

The basic Amiga computer with 256K of RAM memory (the minimum configuration) sells for $1295, or about the same price as a good portable VCR. More memory means more power, so count on spending another $200 or so for a memory expansion card that brings the total to 512K. While a half-million characters of memory seems like a lot in today's world of dinky 64K home computers, it is actually very little when you consider the Amiga's ultimate capacity of 8.5 megabytes. (Additional memory above 512K attaches to an extension of the microprocessor bus on the side of the machine.)

The Amiga comes with an 880K double-sided 3.5-inch microfloppy-disk drive built in, but one is never enough. As they say, the first one's free. A second floppy will cost $295. Hard disks will be available too: 20 megabytes of fast online storage for a little over a kilobuck ($1000 to you). As for video accessories, the gen-lock adapter is promised for about $200, the frame grabber slightly more, around $300. Commodore's RGB (analog) color monitor will set you back an additional $500 or so. Then there are graphics tablets, trackballs, joysticks—on and on and on.

The point is that even the most fullblown Amiga system comes in for less than $4000—a price that doesn't even get you a power cord on the so-called "professional" systems. The Amiga is a price performance breakthrough for those who need it or can use it. The rest of us may have to wait until prices come down, as they almost inevitably do in the computer business.

—Tim Onosko

Computer Hitware

Hal Leonard Publishing

Computer Hitware gives you 10 songs—including Duran Duran's "Wild Boys" and "Hungry Like the Wolf"—and you get to choose from "visual scores" tagged with noninformative names like "Conology," "Mugato," and "Ice Cube." Just pick a song and a visual and sit back. If you're feeling energetic, fiddling with the numeric and function keys will affect the score. For example, "Mugato" plus the numeric keys will give you an African-mask kind of face with moving lips. (This may be more interesting if you can lipread.) If you repeatedly hit the number 9 during "Ice Cube" you'll get concentric circles. F1 changes the color and F3 makes the whole screen flash, and so on.

That's about all there is to it. H.L. Publishing says you can use this disk in conjunction with another of its music disks, *MacMusic for the C-64*, but nothing I can find in either package tells me how. You do get a large paperback fan book with pictures and lyrics. It might be a good choice for an early adolescent who's just begun to realize there's a world beyond the monitor screen but doesn't want to deal with it directly yet.

—Louise Kohl

BEST SELLERS/HOME

1. **Print Shop.** AP, C64, AT. Broderbund.
2. **Print Shop Graphics Library 1.** AP, C64, AT. Broderbund.
3. **Print Shop Graphics Library 2.** AP. Broderbund.
4. **Newsroom.** AP. Springboard.
5. **Print Master.** IBM, PCjr. Advanced Product Solutions.
6. **Bank Street Writer.** AP, APc, IBM, C64, AT. Broderbund.
7. **Dollars & $ense.** AP, APc, IBM, MAC, TIP, Monogram.
8. **Micro Cookbook.** C64. Commodore.
9. **Clip Art Collection.** AP. Springboard.
10. **ClickArt Effects.** MAC. T/Maker.

BEST SELLERS/RECREATION

1. **Gato.** AP, IBM, MAC, PCjr. Spectrum Holobyte.
2. **Hitchhiker's Guide to the Galaxy.** AP, IBM, MAC, C64, AT. Infocom.
3. **Spy Hunter.** AP, IBM, C64, AT. Sega (Simon & Schuster).
4. **Karateka.** AP, C64. Broderbund.
5. **Wishbringer.** AP, IBM, MAC, C64, AT. Infocom.
6. **Flight Simulator II.** AP, C64, AT, DG. SubLogic.
7. **Microsoft Flight Simulator.** IBM. Microsoft.
8. **Ultima III.** AP, IBM, MAC, C64, AT. Origin Systems.
9. **F-15 Strike Eagle.** AP, IBM, C64, AT. Microprose.
10. **Sargon III.** AP, IBM, C64, AT. Hayden Software.

LEGEND: AP = Apple, APc = Apple IIc, APe = Apple IIe, AT = Atari, C64 = Commodore 64, COM = Commodore Pet/CBM, CP/M = 5¼" and 8" formats, DEC = DEC Rainbow, DG = Data General, EPS = Epson QX-10, IBM = IBM-PC, MAC = Apple Macintosh, PCjr = IBM PCjr, TIP = Texas Instruments Professional, TRS = TRS-80, VIC = Commodore Vic-20, VTR = Victor 9000, WNG = Wang Personal Computer, ZEN = Zenith 100.